

# PATENT ABSTRACTS OF JAPAN

A 194

(11)Publication number : 09-132695

(43)Date of publication of application : 20.05.1997

---

(51)Int.Cl.

C08L 61/06  
C08K 3/04  
C08K 3/34  
C08K 5/353  
H01M 4/60

---

(21)Application number : 07-314836

(71)Applicant : AGENCY OF IND SCIENCE &  
TECHNOL

(22)Date of filing : 07.11.1995

(72)Inventor : ISHIKAWA SHUNEI  
NAKAYAMA ATSUYOSHI  
ISHIDA TADASHI

---

## (54) COMPOSITE OF CLAY AND POLYMER CONTAINING SPHERICAL SHELL-LIKE CARBON

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a new material which comprises a composite of a clay and a polymer containing spherical shell-like carbon and is used as an electrode material for lithium battery and capable of protecting the electrode from forming lithium dendrite by inserting a specified thermosetting resin between clay layers.

SOLUTION: This composite is obtained by inserting a thermosetting resin containing spherical shell-like carbon and a conductive phenol-formaldehyde resin between clay layers. The spherical shell-like carbon used preferably comprises C60. The clay used preferably comprises at least one of montmorillonite and saponite. An agent for enlarging the distance between clay layers may be used, which preferably comprises at least one polymer selected from N-vinyl-2-pyrrolidone and N-vinyl-2-oxalidone.

---

## LEGAL STATUS

[Date of request for examination] 07.11.1995

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than